Use Attainability Analysis

for

WBID 1500 Wolf Creek

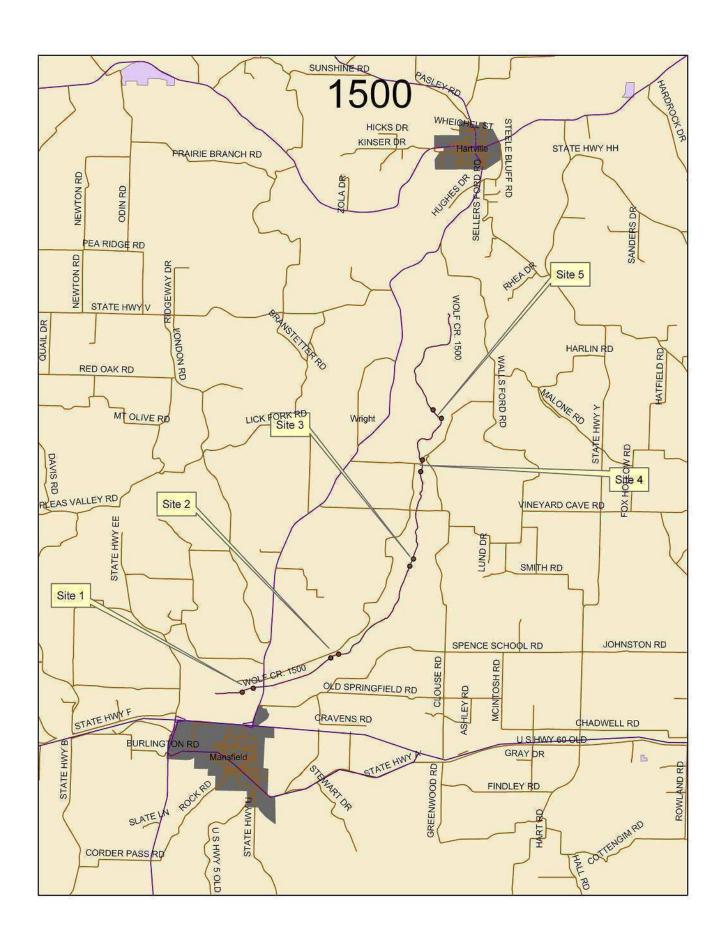
Submitted by SES, Inc.

To Missouri Department of Natural Resources Water Protection Program

Date Received: October 26, 2007

Data Sheet A - Water Body Identification

I. Water Body Information (For wa	ater body being surveyed)
Water Body Name (from USGS 7.5' quad):	
Wolf Creek	
Missouri Water Body Identification (WBID)	Number:
1500	
8 digit HUC code:	County:
10290201	Wright
Upstream Legal Description (from Table H):
T28N R15W 16	
Downstream Legal Description (from Table	H):
T29N R15W 12	
Number of sites evaluated:	
5	
List all site numbers, listed consequently u	pstream to downstream:
1,2,3,4,5	
	he entire segment with assessment sites clearly labeled.
Mark any other items that may be of intere	st.
II. Facility Information (list all permitted d	ischarges to the water body segment)
Facility Name(s) and Permit Number(s):	
Rocky Ridge Manor	
MO 0035564	
III. UAA Surveyor (please print legibly)	
Name of Surveyor:	Telephone Number:
Aaron Ball	(913)307-0046
Organization/Employer:	
SES, Inc.	
	all sections, checked all applicable boxes, and that the form is
complete.	
Signed: Aaron Ball	Date: 10/23/2007
olylled: Aaron Ball	Date: 10/23/2007



WBID#	1500
Site #	1

Date & Time:		10/11/07	13:35	Site Location	on Descrip	tion (e.g. road	crossing):	
Personnel:		Aaron Ball, Drew D	odson		Land own	er access at V	Vestbrook Dr.	
Current Weat	her Con	ditions: clear		Facility Nar	me:	Rocky Ridge	Manor	
Weather cond	litions fo	or the past 10 days:	0.74 inches	Permit Nun	nber:	MO 0035564		
Drought cond	itions?: I	No drought ☑ ; Pha	se I □ ; Phase	Ⅱ 🛛 ; Phas	e III □ ; PI	nase IV □ ; Ur	nknown 🗆	
Site Location	٠.							
		(Universal Transver	se Mercator Pr	rojection, In	Meters			
Site 01	Easting	g (UTM X):	Northing (UTN	И Y):		Horizontal Ac	ccuracy:	Meters
	053736	 36	4108646					4.5
Site 11	Easting	g (UTM X):	Northing (UTN	M Y):		Horizontal Ac	ccuracy:	Meters
	053765	52	4109751	,			-	6.9
	000700)2	7100701					0.5
Photos:						1	1	
Photo ID#	# Photo Purpose		Photo ID#:	Photo Purpose		Photo ID#:	Photo Purpo	se
72	Upstrea	am	73	Downstrear	m			
Photo ID#	F	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpo	se
Photo ID#	F	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpo	se
Uses Observ	ed:							
☐ Swimming	3	☐ Skin diving	☐ SCUBA di	iving	☐ Tubin	g	☐ Water Skiing	
☐ Wind surfi	ng	☐ Kayaking	☐ Boating		□ Wadir	ng	☐ Rafting	
☐ Hunting		☐ Trapping	☐ Fishing		✓ None	of the above	☐ Other:	
Describe:		, ,, ,					•	

WBID#	1500
Site #	1

Surrounding Condition			<i>e</i>		
☐ City/County parks	□ playgrounds	☐ MDC conserv		☐ Urban areas	☑ Rural Residential
☐ Campgrounds	☐ State parks	☐ National Fore		☐ Nature trails	☐ Stairs/walkways
☐ Boating accesses	☐ Fence	☐ No tresspass	sign	☐ Steep Slopes	☐ Other:
Comments:					
Evidence of Human l		Doole / plotfo was		Comming Cites	I Dans audions
☐ Roads ☐ RV/ATV Tracks	☐ Foot path/prints	☐ Dock/platform		☐ Camping Sites	
Comments/other:	☐ Fire pit/ring	☐ NPDES Disch	arge	☐ Fishing Tackle	☐ Livestock watering
Substrate:					
% Cobble	% Gravel	% Sand	% Silt	% Mud/	Clay % Bedrock
30	50				20
Aquatic Vegatation:					
Water Characteristics Odor:	s: □ Sewage	□ Musky	□ Chem	ical 🗸	None ☐ Other:
Color:	☐ Clear	□Green	☐ Gray		Milky ☑ Other:
Bottom Deposit:	☐ Sludge	□ Solids			None
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam		None
Carrado Boposia					

Field Data Sheets for Recreational Use Stream Survey:

Data Sheet B - Site Characterization (continued

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature | Distance from | Width (m) | Length (m) | Median Depth (m) | Max Depth (m)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
_	<u> </u>		L		
comments: (Please re	cord any additional comments	here.)			
tream is dammed u	p 500 ft. to the West.	,			
	ou have completed all s	sections, checke	ed all applicable	boxes, and that the	torm is
omplete.					
				40444000	
urveyor's Signature:	Aaron Ball		_Date of Survey:	10/11/2007	
surveyor's Signature:	Aaron Ball		_Date of Survey:	10/11/2007	
	Aaron Ball SES, Inc.		_	10/11/2007 Field Team Leader	

																		Disso	lved O	xygen		
	Waterbo	ody ID:	1500			Site #:	1									Date:	10/11/0	7		Time:	13:35	
	Estimat	ed Chanr	nel Incisi	on:	2.0	(m) (hei	ght betw	een low b	ank wid	th and wa	iter)					•				N/A		
						ng (UTM	Y), Hor	izontal Ac	curacy I	Estimate	(EPE / P							'•				
	01	UTM X UTM X	<u>:</u>	0537366	5		UTM Y:		410864	6		+/-	4.5	(meters)		Di	ssolved	Oxygen:			(% sat)	
	11	UTWIA		0337032	<u> </u>	. '	O I WI I.		410973	1		1/-	0.9	(meters)			Specif	ic Cond:			(μS/cm))
							N/A	(meters)		ength of	-	_		150	(meters)					37/4	(0 C)	
	(To dete	ermne Le	ength of I	Reach)					(2	20x avera	ge strear	n width)				Wa	ter Tem	perature:		N/A	(°C)	
	Fie	ld Staff:				Aaron E	Ball, Drev	w Dodson						-								
										Tra	nsect C	ross-Se	ction									
		01)2	0)3		04	()5	0)6		07	0:	8	0	19	1	10	1	.1
Station	Distance (m)	Depth (m)	Distance	Depth (m)	Distance	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance		Distance (m)		Distance (m)	Depth (m)	Distance	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
2		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	· 	0.00		0.00
3		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
4		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
5		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
6		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
7		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
, 8		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
0		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
zight Bank	N/A		N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00
eature Type	1 1/21	0.00	11/21	0.00	14/11	0.00	11/21	0.00	14/21	0.00	14/21	0.00	14/21	0.00	1 1/ / 1	0.00	11/11	0.00	14/11	0.00	11/11	0.00
iffle, run, or pool	N	/A	N	/A	N	/A	N	I/A	N	/A	N	/A	N	J/A	N/	'A	N.	/A	N	ſ/A	N	/A

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

Signed: Aaron Ball Date: 10/11/07

WBID#	1500
Site #	2

Date & Time:	10	/11/07	14:40	Site Location	on Descrip	tion (e.g. road	crossing):	
Personnel:	Aa	aron Ball, Drew D	odson		Holland R	d.		
Current Weath	ner Conditio	ons: clear		Facility Nar	me:	Rocky Ridge	Manor	
Weather cond	itions for the	e past 10 days:	0.74 inches	Permit Nun	nber:	MO 0035564		
Drought condi	tions?: No	drought ☑ ; Pha	se I □ ; Phase	II □ ; Phas	e <mark>III □ ; P</mark> l	nase IV □ ; Ur	nknown 🗆	
Site Location	ı:							
		niversal Transver	se Mercator Pr	rojection, In	Meters			
Site 01	Easting (U	TM X):	Northing (UTN	Л Y):		Horizontal Ac	ccuracy:	Meters
	0539668		4109540					5.7
Site 11	Easting (U	TM X):	Northing (UTN	<u></u>		Horizontal Ac	ccuracy:	Meters
	0539870	·	4109633				-	5.7
	0000010		7100000					0.1
Photos:				1		T	T	
Photo ID#	Pho	to Purpose	Photo ID#:	Photo F	Purpose	Photo ID#:	Photo Pu	ırpose
76	Upstream		77	Downstrea	m			
Photo ID#	Phot	to Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Pu	ırpose
Photo ID#	Phot	to Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Pu	ırpose
Uses Observe	ed:							
☐ Swimming		Skin diving	☐ SCUBA di	iving	☐ Tubing	g	☐ Water Skiir	ng
☐ Wind surfir	ng 🗆	Kayaking	□ Boating		□ Wadir	ng	☐ Rafting	
☐ Hunting		Trapping	☐ Fishing		☑ None o	of the above	☐ Other:	
Describe:		110000.3	L 110g		L 110	71 1.10 0.20.0	L 011.0	

WBID#	1500
Site #	2

Surrounding Conditi	ons:					
☐ City/County parks	☐ playgrounds	☐ MDC conser	vation lands	☐ Urban a	reas 🛚	☑ Rural Residential
☐ Campgrounds	☐ State parks	□ National For	ests	☐ Nature tr	ails [□ Stairs/walkways
☐ Boating accesses	☐ Fence	☐ No tresspas	s sign	☐ Steep SI	opes [☐ Other:
Comments:						
Evidence of Human					ou le	
☐ Roads	☐ Foot path/prints			☐ Camping		☐ Rope swings
□ RV/ATV Tracks	☐ Fire pit/ring none	☐ NPDES Disc	narge	☐ Fishing ⁻	ackie L	☐ Livestock watering
Substrate:						
Substrate: % Cobble 50	% Gravel 50	% Sand	% Silt	9	% Mud/Cla	ay % Bedrock
% Cobble 50 Aquatic Vegatation:		% Sand	% Silt	9	% Mud/Cla	ay % Bedrock
% Cobble 50		% Sand	% Silt	9,	6 Mud/Cla	ay % Bedrock
% Cobble 50 Aquatic Vegatation: N/A Water Characteristic	50 s:					
% Cobble 50 Aquatic Vegatation: N/A Water Characteristic Odor:	50 s: □ Sewage	□ Musky	□ Chem		☑ No	one □ Other:
% Cobble 50 Aquatic Vegatation: N/A Water Characteristic	50 s:					one □ Other:
% Cobble 50 Aquatic Vegatation: N/A Water Characteristic Odor: Color:	s: □ Sewage □ Clear	□ Musky □Green	□ Chem	ical	☑ No	one ☐ Other: Iky ☑ Other: N/A
% Cobble 50 Aquatic Vegatation: N/A Water Characteristic Odor:	50 s: □ Sewage	□ Musky	□ Chem	ical	☑ No	one ☐ Other: Iky ☑ Other: N/A one ☐ Other:

Organization: SES, Inc.

Field Data Sheets for Recreational Use Stream Survey:

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
Commente: (Disease us		hans)			
omments: (Please red	cord any additional comments	nere.)			
Please verify that yo	ou have completed all s	sections, checke	ed all applicable	boxes, and that the	e form is

Position: Field Team Leader

																		Disso	lved O	xygen		
	Waterbo	ody ID:	1500		-	Site #:	2									Date:	10/11/0	7		Time:	14:40	
	Estimate	ed Chann	nel Incisi	on:	2.0	(m) (hei	ight betw	een low b	ank wid	th and wa	iter)									N/A		
						-		izontal Ac	•		•		-									
	01 11	UTM X	<u>:</u> :	0539668	3	-	UTM Y: UTM Y:		410954	3		+/-	5.7	(meters)		Di	issolved	Oxygen:			(% sat)	
						_											Specif	ic Cond:			(μS/cm))
		e Stream ermne Le					N/A	(meters)		engtn of 20x avera				150	(meters)		ter Temp	perature:		N/A	(°C)	
	Fiel	ld Staff:				Aaron E	Ball, Drev	v Dodson														
							Í			Tro	nsoct C	ross-Se	ction									
)1	0)2)3		04	()5		1088-36 6		07	0:	o.	0	9	1	10	1	1
Station	Distance (m)		Distance (m)		Distance		Distance		Distance (m)		Distance (m)		Distance		Distance (m)		Distance (m)		Distance (m)		Distance (m)	
Left Bank	0	Depth (m)	0	Depth (m)	0	Depth (m)	0	Depth (m)	0	Depth (m)	0	Depth (m)	0	Depth (m)	0	O Depth (m)	0	Depth (m)	0	Depth (m)	0	Depth (m)
1		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
2		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
3		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
4		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
5		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
6		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
7		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
8		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
9		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
ight Bank	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00
eature Type	N	/A	N	/A	N	/A	N	Ī/A	N	/A	N	/A	N	J/A	N/	'A	N.	/A	N	/A	N	/A

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

	Signed: Aaron Ball	Date:	10/11/07	
--	--------------------	-------	----------	--

WBID#	1500
Site #	3

Date & Time:		10/11/07	14:30	Site Location	on Descrip	tion (e.g. road	crossing):	
Personnel:		Aaron Ball, Drew D	odson		Holland R	ld.		
Current Weat	her Con	ditions: clear		Facility Nar	me:	Rocky Ridge	Manor	
Weather cond	litions fo	or the past 10 days:	0.74 inches	Permit Nun	nber:	MO 0035564		
Drought cond	itions?: I	No drought ☑ ; Pha	se I □ ; Phase	II □ ; Phas	e III □ ; Pl	nase IV □ ; Ur	nknown 🗆	
Site Location	٠.							
		(Universal Transver	se Mercator Pr	rojection, In	Meters			
Site 01	Easting	g (UTM X):	Northing (UTN	И Y):		Horizontal Ad	ccuracy:	Meters
	054182	20	4112107					4.5
Site 11	Easting	g (UTM X):	Northing (UTN	И Y) :		Horizontal Ad	ccuracy:	Meters
	054172	22	411926				<u>-</u>	4.5
	00	<u>-</u>	111023					1.0
Photos:				T		1	T	
Photo ID#	F	Photo Purpose	Photo ID#:	Photo F	Purpose	Photo ID#:	Photo Purp	ose
74	Upstrea	am	75	Downstrea	m			
Photo ID#	F	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purp	ose
Photo ID#	F	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purp	ose
Uses Observ	ed:							
☐ Swimming]	☐ Skin diving	☐ SCUBA di	iving	☐ Tubin	g	☐ Water Skiing	
☐ Wind surfi	ng	☐ Kayaking	☐ Boating		□ Wadir	ng	☐ Rafting	
☐ Hunting		☐ Trapping	☐ Fishing		✓ None	of the above	☐ Other:	
Describe:		,		,	<u>. </u>		•	

WBID#	1500
Site #	3

Surrounding Condition	ons:						
☐ City/County parks	☐ playgrounds	☐ MDC conservati	on lands	☐ Urban a	reas	☑ Rural F	Residential
☐ Campgrounds	☐ State parks	□ National Forests	3	☐ Nature ti	rails	☐ Stairs/	walkways
☐ Boating accesses	☐ Fence	☐ No tresspass sig	gn	☐ Steep SI	opes	☐ Other:	
Comments:							
Evidence of Human U	Jse: ☐ Foot path/prints	□ Dock/platform		☐ Camping	r Sitos	☐ Rope s	owings
☐ RV/ATV Tracks	☐ Fire pit/ring	☐ NPDES Dischard	70	☐ Camping			ock watering
comments/other:	none	L INLINES DISCUSIO	J <u>c</u>		I ackie	Livesic	ock watering
Substrate:							
% Cobble	% Gravel	% Sand	% Silt	9	% Mud/C	Clay	% Bedrock
50	50						
Aquatic Vegatation:							
N/A							
Water Characteristics							
Odor:	☐ Sewage	□ Musky	☐ Chem	ical		lone	☐ Other:
Color:	☐ Clear	□Green	☐ Gray			/lilky	☑ Other:
Pottom Donasit:	□ Cludas	☐ Solids	□ Eino -	ediments		lone	N/A ☐ Other:
Bottom Deposit: Surface Deposit:	☐ Sludge ☐ Oil	☐ Solids	☐ Fine s		<u> </u>		☐ Other:
Surface Deposit.		_ Ocum	_ i Uaili		الاالف	0110	□ ∪0101.

Organization: SES, Inc.

Field Data Sheets for Recreational Use Stream Survey:

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

	L		1		
	cord any additional comments l	here.)			
one					
	u have completed all s	ections, check	ed all applicable	boxes, and that the	form is
omplete.					

Position: Field Team Leader

																		Disso	lved O	xygen		
		ody ID:			_											Date:	10/11/0	7	ı	Time:	14:30	
						• ` ` ` `		een low b								Di	issolved	Oxygen:		N/A	(mg/L)	
	01	ocation - l UTM X UTM X	:	0541820	0	1		izontal Ac	-			DOP / FO +/- +/-		(meters)		Di	issolved	Oxygen:			(% sat)	
						_		(meters)		ength of				(111 1)	(meters)		Specif	ic Cond:			(μS/cm)	
		ermne Le								20x avera					(Wa	iter Tem	perature:		N/A	(°C)	
	Fie	eld Staff:				Aaron E	Ball, Drev	w Dodson						-								
										Tra	nsect C	ross-Se	ction									
		01	()2	()3		04	()5	(16		07	0	8	()9	1	10	1	.1
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
eft Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
2		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
3		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
4		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
5		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
6	i	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
7	,	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
8		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
9		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
ight Bank	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00
eature Type ffle, run, or poo	ı N	I/A	N	/A	N	/A	N	J/A	N	/A	N	/A	N	J/A	N/	'A	N	//A	N	ſ/A	N	/A

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

Signed: Aaron Ball Date: 10/11/07

WBID#	1500
Site #	4

Date & Time:		10/11/07	14:55	Site Location	on Descrip	tion (e.g. road	crossing):	
Personnel:		Aaron Ball, Drew D)odson		Wolfe Cre	ek Rd		
Current Weat	her Con	ditions: clear		Facility Nar	me:	Rocky Ridge	Manor	
Weather cond	litions fo	or the past 10 days:	0.74 inches	Permit Nun	nber:	MO 0035564		
Drought cond	itions?:	No drought ☑ ; Pha	se I □ ; Phase	Ⅱ 🛘 ; Phas	e III □ ; Pl	nase IV □ ; Ur	nknown 🗆	
Site Location	٠.							
		(Universal Transver	rse Mercator Pr	rojection, In	Meters			
Site 01	Easting	g (UTM X):	Northing (UTN	И Y):		Horizontal Ad	ccuracy:	Meters
	054205	 54	4114679					5.7
Site 11	Easting	g (UTM X):	Northing (UTN	М Y):		Horizontal Ac	ccuracy:	Meters
	054200)4	4114376				-	5.7
	00.20	/	1111010					<u> </u>
Photos:			т —	1		1	T	
Photo ID#	F	Photo Purpose	Photo ID#:	Photo F	Purpose	Photo ID#:	Photo Purpos	se
78	Upstrea	am	79	Downstrea	m			
Photo ID#	F	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpos	se
Photo ID#	F	Photo Purpose	Photo ID#	Photo F	Purpose	Photo ID#	Photo Purpos	se
Uses Observ	ed:							
☐ Swimming]	☐ Skin diving	☐ SCUBA di	iving	☐ Tubin	g	☐ Water Skiing	
☐ Wind surfi	ng	☐ Kayaking	☐ Boating		□ Wadir	ng	☐ Rafting	
☐ Hunting		☐ Trapping	☐ Fishing		✓ None	of the above	☐ Other:	
Describe:		, ,, ,	<u></u>		<u>. </u>			

WBID#	1500
Site #	4

Surrounding Conditi	ons:				
☐ City/County parks	☐ playgrounds	☐ MDC conservation la	nds 🛘 Urban a	reas	l Residential
☐ Campgrounds	☐ State parks	□ National Forests	☐ Nature ti	rails 🛮 Stair	s/walkways
☐ Boating accesses	☐ Fence	☐ No tresspass sign	☐ Steep SI	opes ☐ Othe	er:
Comments:	•		•	•	
Evidence of Human I		_			
☑ Roads	☐ Foot path/prints		☐ Camping		e swings
☐ RV/ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing ⁻	Tackle □ Lives	stock watering
comments/other:					
Substrate:					
21 2 1 1 1					
% Cobble	% Gravel	% Sand %	Silt %	6 Mud/Clay	% Bedrock
% Cobble 50	% Gravel 50	% Sand %	Silt %	% Mud/Clay	% Bedrock
50		% Sand %	Silt %	% Mud/Clay	% Bedrock
50 Aquatic Vegatation:		% Sand %	Silt 9	% Mud/Clay	% Bedrock
50		% Sand %	Silt 9	% Mud/Clay	% Bedrock
50 Aquatic Vegatation:		% Sand %	Silt 9	% Mud/Clay	% Bedrock
50 Aquatic Vegatation:		% Sand %	Silt 9	% Mud/Clay	% Bedrock
50 Aquatic Vegatation:		% Sand %	Silt 9	% Mud/Clay	% Bedrock
50 Aquatic Vegatation:	50	% Sand %	Silt 9	% Mud/Clay	% Bedrock
Aquatic Vegatation: N/A Water Characteristic Odor:	50 s: □ Sewage	□ Musky □ C	Chemical	✓ None	□ Other:
Aquatic Vegatation: N/A Water Characteristic	50 s:		Chemical	,	□ Other: ☑ Other:
Aquatic Vegatation: N/A Water Characteristic Odor: Color:	s: ☐ Sewage ☐ Clear	□ Musky □ C	Chemical Gray	☑ None	□ Other: ☑ Other: N/A
Aquatic Vegatation: N/A Water Characteristic Odor:	50 s: □ Sewage	☐ Musky ☐ C ☐Green ☐ G	Chemical	✓ None	□ Other: ☑ Other:

Organization: SES, Inc.

Field Data Sheets for Recreational Use Stream Survey:

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
			+		
			+		
			1		
	cord any additional comments I	here.)			
one					
	•				
lease verify that yo omplete.	ou have completed all s	ections, check	ed all applicable	boxes, and that the	form is

Position: Field Team Leader

																		Disso	lved O	xygen		
					•											Date:	10/11/0	7		Time:	14:55	
	Estimat	ed Chanr	nel Incisi	on:	4.0	(m) (hei	ght betw	een low b	ank wid	th and wa	iter)					Di	ssolved	Oxygen:		N/A	(mg/L)	
				UTM X) 0542054 0542004				izontal Ac						(meters)		Di	ssolved	Oxygen:			(% sat)	
	11	UTM X	<u> </u>	0542004	1		UTM Y:		411437	6		+/-	5.7	(meters)	-		Specif	ic Cond:			(uS/cm)	
		e Stream ermne Le					N/A	(meters)		ength of 20x avera				150	(meters)			perature:				
			_			Aaron E	Ball, Drev	w Dodson						_								
										Tra	nsect C	ross-Se	ction									
	0)1	02 03 04 05)5	0	16		07	0	8	0	19	1	0	1	1					
Station	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
eft Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
2		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
3		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
4		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
5		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
6		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
8		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
9		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00
ight Bank	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00
eature Type		·/ A		-/ A		/ ^	, a	T / A	<u> </u>	-/ A		/ ^		T/A	N.T.		<u> </u>	-/ A	N.T	/ ^	NT.	/ A
ffle, run, or pool	N	/A	N	/A	N	/A	I	I/A	IN.	/A	IN	/A	ľ	√A	N/	A	IN	/A	N	/A	N/	/A

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

Signed: Aaron Ball Date: 10/11/07

WBID#	1500
Site #	5

				 						
Date & Time:		10/11/07	15:43	Site Location Description (e.g. road crossing):						
Personnel:		Aaron Ball, Drew D	odson	feeder creek along Wolfe Creek Rd.						
Current Weath	ner Cond	ditions: clear		Facility Nar	ne:	Rocky Ridge	Manor			
Weather cond	litions fo	or the past 10 days:	0.74 inches	74 inches Permit Number: MO 0035564						
Drought condi	itions?: I	No drought ☑ ; Pha	se I □ ; Phase	· II □ ; Phas	e III □ ; Pł	hase IV □ ; Ur	nknown □			
Site Location	1:									
		(Universal Transver	se Mercator Pr	rojection, In	Meters					
Site 01	Easting	g (UTM X):	Northing (UTN	М Y):		Horizontal Ac	curacy:	Meters		
	054254	! 7	4115761					9.0		
Site 11	Easting	g (UTM X):	Northing (UTN	М <u>Y</u>):		Horizontal Accuracy:				
	054232	<u></u>	4115983					9.0		
								5.5		
Photos:	1			Τ		Т	1			
Photo ID#	F	Photo Purpose	Photo ID#:	Photo P	urpose	Photo ID#:	Photo Pu	rpose		
80	Upstrea	am	81	Downstrear	m					
Photo ID#	F	Photo Purpose	Photo ID#	Photo F	urpose	Photo ID#	Photo Purpose			
Photo ID#	F	Photo Purpose	Photo ID#	Photo Purpose		Photo ID#	Photo Pu	rpose		
				<u> </u>			<u> </u>			
Uses Observ	ed:									
☐ Swimming	J	☐ Skin diving	☐ SCUBA di	iving	☐ Tubin	g	□ Water Skiin	ıg		
☐ Wind surfi	ng	☐ Kayaking	□ Boating		□ Wadir	ng	□ Rafting			
☐ Hunting		☐ Trapping	☐ Fishing		✓ None	of the above	☐ Other:			
Describe:							J			

WBID#	1500
Site #	5

Surrounding Condition	ons:					
☐ City/County parks	☐ playgrounds	☐ MDC conservati	on lands	□ Urban areas	☐ Rural Residentia	al
☐ Campgrounds	☐ State parks	□ National Forests	1	□ Nature trails	☐ Stairs/walkways	S
☐ Boating accesses	☐ Fence	☐ No tresspass sig	jn	☐ Steep Slopes	☐ Other:	
Comments: none						
Evidence of Human l	Jse:					
☐ Roads	☐ Foot path/prints	☐ Dock/platform		☐ Camping Sites	☐ Rope swings	
☐ RV/ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharg	je	☐ Fishing Tackle	☐ Livestock water	ing
comments/other:	none				•	
Cultipativata :						
Substrate:	0/ Craval	% Sand	0/ 0:14	0/ M l /	Olavi O/ Dadw	ء اء
% Cobble 40	% Gravel 50	% Sand	% Silt	% Mud/	Clay % Bedro 10	OCK
40	50				10	
Aquatic Vegatation:						
5% floating aquatic ve	getation 10% veget	ation (rooted) in shal	low areas	<u> </u>		
070 Housing aquatio vo	gotation. 1070 vogot	ation (rootou) in onai	iow aroac	,		
Water Characteristic	s:					
Odor:	☐ Sewage	☐ Musky	☐ Chem	ical ☑	None ☐ Othe	∍r:
Color:	☑ Clear	□Green	☐ Gray		Milky ☐ Othe	er:
Bottom Deposit:	☐ Sludge	☐ Solids			None ☐ Othe	er:
Surface Deposit:	☑ Oil	☐ Scum	☐ Foam		None □ Othe	er:

Organization: SES, Inc.

Field Data Sheets for Recreational Use Stream Survey:

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

	Distance from	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
	access location (m)				
			1		-
omments: (Please re	cord any additional comments	here.)			
one	,				
	ou have completed all s	ections, checke	ed all applicable	boxes, and that the	form is
	ou have completed all s	ections, checke	ed all applicable	boxes, and that the	form is
	ou have completed all s	ections, checke	ed all applicable	boxes, and that the	form is
lease verify that yo omplete.	ou have completed all s	ections, checke	ed all applicable	boxes, and that the	form is
		ections, checke		boxes, and that the	form is

Position: Field Team Leader

																		Disso	lved Ox	xygen		
		ody ID: ed Chanr						een low b	ank widt	th and we	otar)					Date:	10/11/07	1		Time:	13:45	
								izontal Ac				DOP / FO)M)			Di	issolved (Oxygen:		5.5	(mg/L)	
	01	UTM X UTM X		0542547 0542328	7	1		izontai 71c				+/- +/-	9 9	(meters)		Di	ssolved (•			(% sat)	
		e Stream	Width:				3	(meters)				Segment: n width)		150	(meters)	Wo	Specifi ter Temp				(μS/cm)	
	Ì			ŕ		Aaron B	Ball, Drev	v Dodson	(2	OX avera	ge streat	ii widiii)		<u>.</u>		vv a	ici Temp	crature.		10.0	()	
	Transect Cross-Section 01 02 03 04 05 06 07 Distance (m) Depth (m) (m)																					
	0)1	0	2	0	3	(04	0)5	0	6		07	08	3	0:	9	1	0	1	1
Station		Depth (m)		Depth (m)		Depth (m)		Depth (m)		Depth (m)		Depth (m)		Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m
eft Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.2	0.05	0.7	0.15	0.6	0.15		0.00	0.4	0.05	0.7	0.15		0.00	0.6	0.10	0.5	0.05	0.4	0.10	0.8	0.20
2	0.4	0.10	1.4	0.20	1.2	0.20		0.00	0.8	0.10	1.4	0.20		0.00	1.2	0.20	1.0	0.00	0.8	0.30	1.6	0.30
3	0.6	0.15	2.1	0.25	1.8	0.25		0.00	1.2	0.15	2.1	0.30		0.00	1.8	0.15	1.5	0.05	1.2	0.40	2.4	0.45
4	0.8	0.15	2.8	0.20	2.4	0.40		0.00	1.6	0.20	2.8	0.40		0.00	2.4	0.10	2.0	0.00	1.6	0.30	3.2	0.40
5	1.0	0.10	3.5	0.20	3.0	0.50		0.00	2.0	0.20	3.5	0.50		0.00	3.0	0.20	2.5	0.05	2.0	0.40	4.0	0.45
6	1.2	0.10	4.2	0.25	3.6	0.45		0.00	2.4	0.25	4.2	0.50		0.00	3.6	0.30	3.0	0.10	2.4	0.40	4.8	0.40
7	1.4	0.10	4.9	0.30	4.2	0.30		0.00	2.8	0.25	4.9	0.60		0.00	4.2	0.35	3.5	0.05	2.8	0.40	5.6	0.50
8	1.6	0.10	5.6	0.30	4.8	0.10		0.00	3.2	0.20	5.6	0.60		0.00	4.8	0.30	4.0	0.10	3.2	0.30	6.4	0.45
9	1.8	0.05	6.3	0.25	5.4	0.10		0.00	3.6	0.10	6.3	0.40		0.00	5.4	0.20	4.5	0.05	3.6	0.15	7.2	0.30
ight Bank	2.0	0.00	7.0	0.00	6.0	0.00	N/A	0.00	4.0	0.00	7.0	0.00	N/A	0.00	6.0	0.00	5.0	0.00	4.0	0.00	8.0	0.00
eature Type				1		1		r/ A						T / A		1				1		,
ffle, run, or pool		ool		on left desce	po anding bank (/A		ool		ool	N	I/A	po	01	rif	ie	po	100	po	01

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

0.60 MAXIMUM

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

MEDIAN

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

	Signed:	Aaron Ball, Drew Dodson	Date:	10/11/07	
--	---------	-------------------------	-------	----------	--

WBID# 1500



Site# 1 Photo ID# 72, Upstream



Site# 2 Photo ID# 76, Upstream



Site# 1 Photo ID# 73, Downstream



Site# 2 Photo ID# 77, Downstream

WBID# 1500



Site# 3 Photo ID# 74, Upstream



Site# 4 Photo ID# 78, Upstream



Site# 3 Photo ID# 75, Downstream



Site# 4 Photo ID# 79, Downstream

WBID# 1500



Site# 5 Photo ID# 80, Upstream



Site# 5 Photo ID# 81, Downstream